AMENDMENTS TO THE SPECIFICATION

Please amend the specification, as follows:

Please replace the paragraph at page 1, lines 6-10 with the following amended paragraph:

"In the search for polymer materials appropriate for building nuclear reactors, it was determined that PTFE, in contrast to its high chemical and thermal stability, is extraordinarily sensitive to radiation. Under inert conditions as well as in the present of oxygen, it even decomposes at low absorbed doses, becomes brittle even at 0.2 to 0.3 kGy and crumbly at <100 kGy. [[...]]

Please replace the paragraph at page 1, lines 11-12 with the following amended paragraph:

Beginning at approximately 360°C, the purely radiochemical decomposition is noticeably overlaid by a thermal decomposition. [[...]]

Please replace the paragraph at page 1, lines 13-14 with the following amended paragraph:

Due to the stochastic progression of the radiochemical decomposition, reaction products form with a wide spectrum of chain lengths. [[...]]

Please replace the paragraph at page 1, lines 15-16 with the following amended paragraph:

If PTFE is irradiated in the presence of oxygen, peroxy and alkoxy radicals are formed from the perfluoroalkyl radicals that initially formed. [[...]]

Please replace the paragraph at page 1, lines 17-19 with the following amended paragraph:

In the course of the intermediate stage of the formation of the alkoxy radical, the perfluoroalkyl radical end group is decomposed in stages by shortening the chains and formation of carbonyldifluoride. [[...]]

Please replace the paragraph at page 1, lines 20-21 with the following amended paragraph:

In contrast, perfluoroalkanic acid fluorides and perfluoroalkyl radical end groups form from the alkoxy radical side groups. [[...]]

Please replace the paragraph at page 1, lines 23 to page 2, line 3 with the following amended paragraph:

[[...]] Unsintered and unpressed PTFE emulsion and suspension polymers are of a fibrous-felted character. A transfer, for example, of the anti-adhesive and sliding characteristics of PTFE to other media by integration into aqueous or organic dispersions, polymers, dyes, lacquers, resins,

or lubricants is not possible because this PTFE cannot be homogenized, but rather tends to form clumps, agglomerates, floods, or settles.

Please replace the paragraph at page 2, lines 4-19 with the following amended paragraph:

By means of the effect of high-energy radiation with an absorbed dose of approximately 100 kGy, a pourable fine powder is obtained from the fibrous-felted polymers as a result of the partial decomposition of the polymer chains. This powder still contains loose agglomerates that can be easily separated into primary particles with a particle diameter of <5 μm. In the case of irradiation in the presence of reactants, functional groups are formed into the polymer. If the irradiation occurs in air, then according to Eq. (9.22) (and subsequent hydrolysis of the -COF groups by means of moisture in the air), carboxyl groups result. If, before irradiation, $(NH_4)_2SO_3$ is mixed in, then groups containing S are to be attained. These functional groups reduce the hydrophobia and organophobia of the PTFE so substantially that the resulting fine powder can be easily homogenized with other media. The positive characteristics of PTFE, such as its excellent gliding, separating, and dry lubrication characteristics as well as its high chemical and thermal stability, are maintained. Carboxyl and sulfonic acid groups to which perfluorized chains are connected also have a high degree of chemical inertness. [[...]]

Please replace the paragraph at page 5, lines 6-7 with the following amended paragraph:

~~SBS, ABS, SBR, NBR, NR~~ styrene-butadiene-styrene block copolymer (SBS), acrylonitrile-butadiene-styrene copolymer (ABS), styrene butadiene rubber (SBR), nitrile butadiene rubber NBR), natural rubber (NR) and other butadiene- and/or isoprene-homo-, -co- or -ter-polymers are used as such advantageous olefinically unsaturated polymers.